

# Overview of MDOT-LAP Review Process/Requirements

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# Local Agency Programs Web Site

[http://www.michigan.gov/mdot/0,1607,7-151-9625\\_25885---,00.html](http://www.michigan.gov/mdot/0,1607,7-151-9625_25885---,00.html)

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# Overview

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- Programming Application
- Permits/Clearance Documents
- Design Exception
- Plans, Special Provisions, and Cost Estimate
- Grade Inspection
- Final Submission

# Program Application

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- Be sure it is complete and the latest edition! Check the web site prior to filling out the application for the latest edition.
- Project limits must match the plans , MPO TIP, and RTF balance sheet.
- Compare cost information with engineer's estimate.
- Make sure Permits have been applied for. (MDEQ, MDOT, etc.)
- Be working on obtaining ROW. Attachments “A” and “B”.
- The request of obligation typically comes after the turn in of the final PS&E and all ROW and permits have been obtained.

# Program Application cont...

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- If 3R project need to submit crash analysis with program application.
- Verify if project is on the NHS (national highway system). Most local roads are not on the NHS.
- Parking is non-participating and all costs should be listed in the non-participating area.
- Make sure the speed limit (design speed) and cross sections match the plans. This affects the review process.
- Do not self designate yourself as the project supervisor/engineer.

# Permits/Clearance Documents

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- Are there any permits/clearance documents required for this project?

<MDEQ

<MDOT

<MDNR

<Corp. of Engineers

<Local Agency Permits

<SHPO

<FAA

- When items are within project limits, appropriate agency project clearance documents and review are required for the environmental evaluation and must be kept in the project file.

# Permits - DEQ

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## ■ MDEQ - Definition Inland Stream vs. Drainage Course

–DEQ regulates activities involving inland streams. Part 301 (Act 451) defines an inland stream as a river, stream or creek which may or may not be serving as a drain as defined by the drain code of 1956 or any other body of water that has definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water during certain times of the year. If the land feature (overland flow) shows evidence of flow but does not meet the definition of a stream, this condition is designated as a drainage course. Therefore, if culvert work is being planned along a drainage course system, a permit from the DEQ is not required, provided the proposed work will not impact regulated wetlands.

# Permits - DEQ

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<MDEQ continued.....

- Note that if the contributing drainage area to a bridge or culvert crossing two square miles or greater on a stream or drainage course, the DEQ's Land and Water Management Division (LWMD) must review and approve the project for hydraulic efficiency under provisions of Part 31 (Act 451).
- When a agency is installing a bridge or culvert or performing other road work involving a county drain, a permit from the DEQ is required unless the work is being done with a larger drain project that is exempt from a DEQ permit.

<A permit is needed if the waterway appears as a “blue” line on the USGS maps.



# Permits - MDOT

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- MDOT permits are required when:
  - <Work is being performed within MDOT ROW
  - <Construction signs will be placed within MDOT ROW
  - <The detour route will be utilizing a MDOT roadway

# Permits - Corp of Eng.

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- Corp of Engineer permits are required when:  
◁Project affects navigable waterways

# Design Exceptions

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- Contact MDOT as early as possible during the design phase if one of the 13 controlling design elements can not be satisfied.
- Discuss options with MDOT and together determine if a design exception will be required
- If a design exception is required a safety review and crash analysis must be attached. The MALI data (crash data) is only part of the safety review.
- Don't wait until the GI stage !!!

# 13 Controlling Design Elements

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1. Design Speed
2. Shoulder Width
3. Bridge Capacity
4. Vertical Alignment
5. Grade
6. Superelevation
7. Horizontal Clearance
8. Lane Width
9. Bridge Width
10. Horizontal Alignment
11. Sight Distance
12. Cross Slope
13. Vertical Clearance

# Needed for Grade Inspection Review

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- Program Application
- Plans - 80% complete (alignment, pay items defined, typicals, soil borings, title sheet, curve data (horizontal/vertical), see additional comments required for bridge plans)
- Preliminary Cost Opinion
- Special Provisions
  - <Progress Clause,
  - <HMA Application Estimate
  - <Coordination Clauses
  - <Maintaining Traffic
  - <RXR information

# Additional Items Needed for Bridge Grade Inspection

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- Plan and elevation view of structure
- Hydraulic table
- Typical bridge cross section, section through abutment/pier/wingwall
- Riprap header details (if applicable)
- All that pertains from the MDOT design manual
- Refer to LAP website for a complete and detailed list.

# Grade Inspection Review

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# Grade Inspection Review

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- Cover Sheet Plans (80% Complete)

- <Title Block have MDOT & FHWA if federal funding

- <Control Section/Job Number & Federal Project Number/Federal Item Number

- <MDOT Standard Plans listed (verify up-to-date check web)

- Special Details printed in proposal with cover sheet or included in the plans

- <Signature block with signatures by the local agency representative who is financially responsible and the project engineer with seal.



# Grade Inspection Review

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Plans (80% Complete)

## ■ Cover Sheet Cont...

<Construct according to 2003 Standard Specifications for Construction. Designed in accordance with MDOT Local Agency Programs Guidelines for Geometrics (4R-AASHTO, 3R, or preventative maintenance)

<Traffic Data (match with Program Application)

<Signature blocks provided

<Location map (with North arrow)

<POB & POE shown on map

<Utilities listed

# Grade Inspection Review

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## Plans (80% Complete)

### ■ Typical Sheet (s)

- <Make sure typical cross-sections are provided for complete job (POB to POE)
- <HMA Application Est./Table with application rates for each course, PG Binder, AWI, and Bond Coat
- <General notes
- <Meet 4R-AASHTO, 3R, or preventative maintenance guidelines
- <Match items of work with pay items
- <Make sure existing typicals are included

# Grade Inspection Review

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Plans (80% Complete)

## ■ Plan/Profile Sheets

<Design meets 4R-AASHTO, 3R, or preventative maintenance guidelines

<Stationing clearly marked

<Utilities clearly marked

– Gas should be flagged with a double box

“Caution Hazardous and/or Flammable Material”

– Fiber Optics flagged “Caution Critical Underground Utility”

<ROW clearly marked and dimensioned.

<Items of work called for, match pay items listed

<Fonts & scale adequate for reduction to 1/2 size

<No shading

# Grade Inspection Review

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## Plans (80% Complete)

### ■ Plan/Profile Sheets (Cont.)

- <Pay quantities listed per sheet or on a quantity sheet
- <Appropriate plan notes included
- <POB & POE clearly marked with no work beyond limits
- <Proposed Radii clearly marked
- <Street names clearly marked

# Grade Inspection Review

- Preliminary Estimate needs to be itemized and in numeric order.

Michigan Department of Transportation					
Detail Cost Estimate					
Project Number	000000 A	Estimate Number	2112JRX		
Project Name	Sample Project	Fund. Src. Proj. #	00-00157P		
Construction Type		Checked by	James Raye		
Description	New addition of a bicycle path to connect the City Park to Lakeside Trail.		Work Edited by	Sample User	
Category 1 - 100% City					
Pay Item	Description	Qty	Unit	Unit Price	Total
2020001	Fill, 200 to 450 mm	266	cu	\$266.81	\$71,000.26
2020005	Slump, 200 to 450 mm	266	cu	\$151.75	\$40,365.50
2020001	Project Cleanup	1.00	LS	\$8,267.77	\$8,267.77
Category 1 Total					\$119,633.53
Category 2 - 100% State Funding					
Pay Item	Description	Qty	Unit	Unit Price	Total
1040001	Contract Staking	1.00	LS	\$17,851.97	\$17,851.97
1040002	Contract Staking, Urban	1.00	LS	\$6.66	\$6.66
3010002	Subbase, 10"	199.66	sq	\$12.56	\$2,507.93
3020003	Aggregate Base, 30 mm	214.66	sq	\$24.2	\$5,194.87
4010001	Curb, 12" H, Conc, 1200 mm	266	lin	\$119.76	\$31,856.16
3020004	Shoulder Curb, Conc, 12"	6.66	cu	\$574.64	\$3,827.11
Category 2 Total					\$34,537.64
Category 3 - 100% Federal Funding					
Pay Item	Description	Qty	Unit	Unit Price	Total

9/24/2012 12:41:25PM 1 of 2

# Grade Inspection Review

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- Mobilization  $\leq$  5% Total Construction Estimate
- MDOT Pay Codes
- SP = 7000 pay codes and some standard pay items
- All pay items covered?
- Pay Items match Special Provisions
- Compare with Program Application

# Grade Inspection Review

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Note on participating items

## ■ Sidewalk:

<Existing that is impacted or Short gap fill in = ok

<New if MPO/RTF eligible (or Cat. A Grant)

## ■ Parking

<Only if... Can and will be used as future traveled lane when traffic volumes warrant. Requires a letter from the local agency and will be included in the agreement

## ■ Utilities

<Storm sewer eligible for road drainage only

<No sanitary sewer or water main.

## ■ Landscaping

<Sod/Seed and Trees as replacement only.

# Grade Inspection Review

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## Preliminary cost estimate

- Separate Participating from Non-Participating
- No Decimals excluding (acre pay unit, when combining two projects with LS, and elastomeric bearings)
- Separate Bridge from Road Items.
- Separate Job Numbers if more than one is used.



# Grade Inspection Review

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## Special Provisions

### ■ LA/Consultant Authored SP

<Every “7000 Item” needs a SP. (Even some non-7000)

<Meets MDOT Template

- Header
- Document
- Pay Item and Pay Units
- Page Numbering (1 of \_\_ )

### ■ MDOT FUSP/SS (Frequently Used Special Provisions/Supplemental Special Provisions)

<Access off the Internet.

# Grade Inspection Review

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## HMA Application Estimate

- Proposal HMA Estimate must match Plan HMA Estimate (mix selection, yields, AWI, etc.)
- Mix Design matches LAP HMA Selection Guide
  - <Check Commercial ADT (Plan Cover or Prog. App.)
  - <If Mix Design is non-MDOT; it may be used with LA letter of acknowledgment of non-compliance.
- If the number of roller methods is desired for compaction make sure it is clearly defined

# HMA Estimate Example (Nuclear Gauge Density)

## SPECIAL PROVISION FOR HOT MIX ASPHALT (HMA) APPLICATION ESTIMATE

1 OF 1

2/21/02

### **DESCRIPTION**

This work shall be done in accordance with the requirements of Division 5 of the MDOT 2003 Interim Standard Specifications for Construction and as herein specified.

### **MATERIALS**

The HMA Base Mixture No. \_\_\_\_\_ shall have a yield of \_\_\_\_\_ pounds per square yard.

The HMA Mixture No. \_\_\_\_\_ shall have a yield of \_\_\_\_\_ pounds per square yard.

The HMA Mixture No. \_\_\_\_\_ shall have a yield of \_\_\_\_\_ pounds per square yard.

The HMA Approaches, HMA Mixture No. \_\_\_\_\_, shall have a yield of \_\_\_\_\_ pounds per square yard.

The Performance Grade asphalt binder range for the Mixture shall be \_\_\_\_\_.

The Aggregate Wear Index (AWI) for the wearing course shall be \_\_\_\_\_.

The Asphalt Bond Coat material shall be per Section 502.02 of the MDOT 2003 Interim Standard Specifications for Construction. The uniform rate of application shall be 0.0 to 0.10 gallons per square yard.

Density testing will be completed by the Local Agency Representative.

### **MEASUREMENT AND PAYMENT**

Measurement and Payment shall be at the contract unit price per ton.

# HMA Estimate Example (Number of Roller Density)

## SPECIAL PROVISION FOR HOT MIX ASPHALT (HMA) APPLICATION 1 OF 1

3/15/02

### DESCRIPTION

This work shall be done in accordance with the requirements of Division 5 of the MDOT 2003 Interim Standard Specifications for Construction, except as herein specified.

### CONSTRUCTION METHODS

The Nuclear Gauge Method for testing compaction, Section 504.01, is hereby waived for this project. The Number of Rollers Method chart below shall apply.

Number of Rollers Required Based On Placement Rate:

Average Laydown Rate, Square Yards/Hour	Number of Rollers Required Compaction Rollers	Finish Rollers
Less Than 800	1	*1
800 - 1800	1	1
1800 - 4000	2	1
4000 - 7200	3	1

\* The compaction roller may be used as the finish roller also.

### MATERIALS

HMA\_\_\_ for base course shall have a yield ~~of~~ \_\_\_ pounds/square yard.

HMA\_\_\_ for leveling course shall have a yield ~~of~~ \_\_\_ pounds/square yard.

HMA\_\_\_ for wearing course shall have a yield ~~of~~ \_\_\_ pounds/square yard.

HMA\_\_\_ for approaches/driveways shall have a yield ~~of~~ \_\_\_ pounds/square yard.

The Performance Grade asphalt binder range for the mix shall ~~be~~ \_\_\_.

The Bond Coat material shall be per Section 502.02. The uniform rate of application shall be 0.0 to 0.10 gallon/square yard. No separate payment shall be made for the bond coat material.

Aggregate Wear Index (AWI) for the wearing course shall be a minimum \_\_\_.

Recycled Asphalt Pavement (RAP) shall/shall not be allowed in the wearing course.

### MEASUREMENT AND PAYMENT

Measurement and Payment shall be at the contract unit price per ton.

# Grade Inspection Review

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## Pavement Structure Design

- Required for AASHTO projects and category D projects
- Recommended for 3R projects
- Verify the design is adequate.
- Verify the thickness of the various layers are represented in the typical cross-sections and in the HMA application estimate and table.

# Grade Inspection Review

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## Coordination Clause(s)

- Other projects in area or Construction Influence Area
  - <Other MDOT work
  - <Haul Routes
  - <Detours
  - <Enhancement Projects
- Adjacent work or LA work within project area.
  - <Planned force account work or maintenance
- Utility work within project limits.
  - <Utility Work listed with contact person name & phone.
- Any need to coordinate with any other project or event in the area (i.e. parade, run/walks)
- If a RXR is within the project limits

# Grade Inspection Review

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## Railroad Coordination

- Needed if any Railroads are in the project
- No Gapping Out

# Grade Inspection Meeting

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# The Grade Inspection Meeting

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- Puts the Local Agency, MDOT, and any other Consultants on the same page.
- Allows for a site review.

# Grade Inspection Meeting

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- Check the POB/POE as logical termini.
- Is the work clear?
- Missing work? i.e., Pole relocations, Drives, sidewalk ramps, potential grading, tree removal, drainage issues/problems.
- Any police, fire stations, hospitals that need to maintain access? (To be included in Maintaining Traffic SP)
- Any permits required... i.e., MDOT, MDEQ

# Grade Inspection Meeting

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- GI Attendance Sheet sign in.
  - <Hand out business calling cards.
  - <If Project Engineer or Supervisor is not in attendance MDOT will reschedule the GI.
- Introductions
- Have Design Engineer/Project Engr. give an overview of project.
- Go over programming, funding, target let date.
- Review Design Exceptions if not previously discussed

# Grade Inspection Meeting

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- Have Utilities give input, questions -then they are free to leave if necessary.

# Grade Inspection Meeting

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## Utility commitment letters

- They are no longer a requirement but if there is significant relocation or work that might delay the project it is best to get the LA to put in writing the request well in advance of the start of project. If the contractor is delayed due to the utility companies he can file for an extra. This is non-participating. The LA will need to file a claim against the utility company to recoup cost and it is best if there is a paper trail.

# Grade Inspection Meeting

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- Plans - Start with cover sheet and go over plans sheet by sheet.
  - <Ask for other comments/revisions before going to next sheet.
  - <Review design criteria with proposed work

# Grade Inspection Meeting

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## ■ Cost Estimate

<Participating/Non-Participating Separated.

- Make sure they understand anything that is not participating.

<No decimals

<Must have 7000 Item for SP or “Modified’s”, “Special’s”

<Must have Mobilization

(  $\leq$  5% total construction)

# Grade Inspection Meeting

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## Cost Estimate

- All cost estimates must be submitted electronically via MERL or SAPW (hard copy followed by fax/mail.)
- Contacts:

<MERL - Local Technical Assistance Program (LTAP)

Michigan Technological University

906-487-2102

[www.michiganltap.org](http://www.michiganltap.org)

<SAPW - Michigan Department of Transportation

Monica Thornton

517-335-2184



# Grade Inspection Meeting

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## Cost estimate cont...

- Categories

- <0001 - Road participating

- <0002 - Bridge participating

- <0003 - Road non-participating

- <0004 - Bridge non-participating

- Make sure the participating and nonparticipating items are separated.

# Grade Inspection Meeting

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- Special Provisions

- <Inform them of any missing (necessary) SPs.

- <Extraneous or redundant SP - remove (i.e., an MDOT pay item that is not modified but has a SP)

- Maintaining Traffic SP - discuss

- Progress Clause -discuss

- HMA Application Estimate - discuss

# Grade Inspection Meeting

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## Maintaining Traffic Special Provisions

- Must include ...
  - <General information including section 103.05, 103.06 and 812 of the Standard Specs.
  - <Construction Influence Area
  - <How the traffic is to be maintained
  - <Detour route
  - <Staging information
  - <Traffic control devices

# Grade Inspection Meeting

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## Maintaining Traffic Special Provisions cont...

- Pay items associated with maintaining traffic. They cannot use Maintain Traffic LSUM pay item except for preventative maintenance. When the LSUM option is used for PM projects the estimated quantities must be provided for information only.
- Can not modify Minor Traffic Devices.
- Andy's law signs must be included.

# Grade Inspection Meeting

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## Progress Clause

- Remember Progress Clause - NOT SCHEDULE
- Make sure a start and completion time is specified.  
There can only be one completion time either number of days or calendar date. Not both.
- Phase construction needs to be addressed.
- If an incentive/disincentive is called for make sure a road user cost analysis is performed and submitted for your review. (Refer to handout)
- The LA or consultant sets up the preconstruction meeting not the MDOT resident.

# LAP HMA Selection Guidelines

## Local Agency Programs Hot Mix Asphalt (HMA) Selection Guidelines

12-26-01

This guide is to aid in the selection of Hot Mix Asphalt (HMA) and application rates utilizing the Superpave mix design system along with the Marshall mix design system. The table below recommends Superpave type mixtures for projects with Commercial ADT > 700. The substitution of another HMA mixture type other than Superpave is allowed if it has proven to perform under similar traffic conditions.

### A. HMA Mixture Type and Binder selection

Selection is based on present day two-way commercial ADT.

Com. ADT	Com.ADT 0-300	Com.ADT 301-700	Com.ADT 701-1000	Com.ADT 1001-3400	Com.ADT 3401- 9999
Mixture Type					
Top	13A or 36A	4C	5E3	5E10	5E30
Leveling	13A	3C	4E3	4E10	4E30
Base	13A	2C	3E3	3E10	3E30
Binder Grades by Region					
Superior	PG 58-34	PG 58-34	PG 58-34	PG 58-34	
Metro	PG 58-22	PG 64-22	PG 64-22	PG 64-22	PG 70-22P
All Other	PG 58-28	PG64-28	PG-64-28	PG64-28	PG70-28P

# Final Plan Review

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# Final Plan Review

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## GI comments

- Make sure all GI comments are addressed
  - <Make sure all comments/concerns made by utility companies are addressed.
  - <Make sure all MDOT comments are addressed.
  - <Make sure all of your comments are addressed. Double check your notes so that nothing is overlooked.
  - <If comments are not addressed, the agency or designer needs to explain why nothing was changed.



# Final Plan Review

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## Cost Estimate

- Verify no decimals
- Verify a unit price for all pay items
- Make sure all 7000 items exactly match the pay item description in the special provisions.
- 7000 items should be labeled as Pavt Rem, Modified using a comma not a dash
- If more than one job number is used verify the proper items are located under the correct job.
- Make sure Mobilization is used

# Final Plan Review

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## Design Exceptions

- If a design exception was requested and approved, make sure the details in the exception are addressed. (i.e. advance warning signs for horizontal curve not meeting posted speed limit)

# Final Plan Review

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## Environmental Issues

- If an Environmental Assessment was required make sure all items listed in the assessment are addressed.  
<FONSI (finding of no significant impact) has to have been issued
- If a MDEQ or MDNR permit is required make sure all items listed in the permit are addressed.

# Final Plan Review

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## Special Provisions

- In the 2003 Spec Book, section 104.06 states, The following parts of the contract will prevail over all other parts in the following order:
  - <A. All proposal material except those listed in B-F.
  - <B. Special Provisions.
  - <C. Supplemental Special Provisions
  - <D. Project Plans and Drawings
  - <E. Standard Plans
  - <F. Standard Specifications.

# Final Plan Review

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## Special Provisions cont...

- Make sure all comments made in the GI are addressed.
- They must follow MDOTs format and layout. They need to be dated and have author initials. (Refer to handout)
- Make sure all pay items are also listed in the cost estimate.
- Make sure a FUSP is not in conflict with SP.

# Final Plan Review

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## Utility Coordination Clause

- The standard Utility Coordination Clause must be included.
- On some jobs a Utility Coordination Clause is also required due to the nature of utility work (i.e. relocation from under roadway to ROW limits, utilities relocations on bridge replacements, etc.)

# Final Plan Review

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## ROW certification

- Need signed attachment B on all projects prior to advertising!!!!
- If ROW is required then attachment A (and possibly attachment B) needs to be reviewed by MDOT's Real Estate Division prior to advertisement.
- Remember a grading permit is ROW.
- Remember that no work is to be performed outside of the ROW limits.

# Final Plan Review

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## Coordination Clause

- You will need if any of the following is present:
  - <Other LA work in the area
  - <Other MDOT work in the area
  - <Any need to coordinate with any other project or event in the area (i.e. parade, run/walks)
  - <If a RXR is within the project limits.
  - <Proposed utility work
  - <Etc.



# Final Plan Review

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## HMA Application Estimate

- Make sure the mix selection, yields, AWI, etc. match the HMA Application Table on the plans.
- If the number of roller methods is desired for compaction make sure it is clearly defined.

## In conclusion....

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- Assume a proactive role. Refer to the program planning guide. Submit the program application about a month before the GI package. This give the staff engineer and project development engineer and opportunity to review funding, right-of-way and environmental issues, bridge and railroad data, crash analysis, and so on.
- Make sure the submitted package is for the proposed project. We encounter lots of plan packages referring to other projects.

## In conclusion...

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- Help the staff engineer serve you better. Help him/her to produce a proposal without the need for contractor inquiries, addendums, bid overruns. This will help to avoid problems during construction.
- The Local Agency must send approval to advertise the project, or it will not make the letting.

# Questions

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